

Comparative Analysis of Family Planning Services in Urban and Rural Health Facilities in Nigeria

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Abstract

Aim: This study aimed to compare family planning (FP) services in urban and rural health facilities in Nigeria. **Materials and Methods:** The study is a cross-sectional study conducted in 204 rural and 198 urban health facilities comprising 182 primary and 216 secondary facilities in Nigeria. A FP client was randomly selected from each of the facilities, and structure questionnaires were used to collect information from them. Data collected include the various types of contraception available, waiting time, and satisfaction with services. Data were analyzed with IBM-SPSS Statistics Version 25.0. **Results:** The most requested contraceptives methods were injectables (48.2%) and oral contraceptives (22.6%). Most clients in both the rural (76.0%) and urban (76.3%) waited <30 min to see health providers. However, 20.1% of clients in urban health facilities waited for 30–60 min compared to 15.2% in rural areas ($P < 0.05$). The overall quality of service was 90.0% in rural and 92.9% in urban areas ($P < 0.05$). Over 90% of both rural and urban clients were satisfied with how providers received them, cleanliness of the facilities, and time spent with care providers but less than half (<50%) were satisfied with the services they received. Significantly higher quality of services was reported by clients in the northern parts of Nigeria (6.74/7) ($P < 0.001$), whereas client's satisfaction was slightly higher in the South (6.56/7) ($P > 0.05$). **Conclusion:** There is a need for an improvement in waiting time and quality of services offered in health facilities. Policymakers should to carry out regular supervision of health facilities and ensure availability of contraceptives in the health facilities at affordable prices in order to improve FP uptake in Nigeria.

Keywords: Availability, clients, contraceptives, family planning, uptake

INTRODUCTION

Family planning (FP) is service that helps both married and unmarried persons to decide whether they want to have children or not as well as to prevent conception in-between children. The FP is sustained with the use of contraception and the prevention of unintended infertility.^[1] The population of the world is currently more than seven billion, and it is expected to hit over ten billion by 2050.^[2] At present, developing countries constitute over 70% of the world population^[3] and the around 97% of the projected over 2 billion increase by 2050 is expected from developing countries with about 50% from Africa alone^[4] because the annual population growth of Sub-Saharan Africa is estimated

as 2.53%^[5] and Nigeria alone constitutes over 2% (2.55%).^[6] The population of Nigeria has been in a steady increase rate of over 2% since 1965 with about 2.6% increase in 2020; this makes the number of individuals in Nigeria in 2020 increased 206 million and the highest population in Africa.^[6,7] It is also projected that by the year 2045, the population of Nigeria may increase more the US population, making Nigeria the third-highest population country equaling China population size expected to be around one billion by 2100.^[8] Despite the rising population of Nigeria, the country is still faced the challenge of population control as the FP need is greatly unmet, many individuals have more children than the number

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Received: 31-Mar-2021
Accepted: 17-May-2021

Revised: 11-May-2021
Published: 25-Sep-2021

Access this article online

Quick Response Code:



Website:
<http://iahs.kaums.ac.ir>

DOI:
10.4103/iahs.iahs_60_21

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How to cite this article: Onoja AJ, Sanni FO, Akogu SP, Onoja SI, Abubakar A. Comparative analysis of family planning services in urban and rural health facilities in Nigeria. *Int Arch Health Sci* 2021;8:143-8.

they planned, even without adequate spacing and the rate of contraceptives use is relatively small.^[4]

A recent study conducted in Nigeria revealed that the total fertility rate among women in Nigeria based on ethnicity was Hausa/Fulani-8.02, Igbo-4.91, and Yoruba-4.43 with 40% of Hausa/Fulani women having more than five children while 21.6% and 17.5% of Yoruba and Igbo women also had more than five children.^[9] This shows that Nigeria is experiencing a fast-growing population without equivalent control, and this is a very complicated challenge for the country, hence, the need for sufficient FP programs. In 2008, the Nigeria demographic and health survey stated that the use of contraceptives among Nigerian married women was as low as 10%, while the 2013 survey revealed that the prevalence of contraceptives was 21% in urban areas and 9% in rural areas.^[10,11] Similar reports have also been documented from 1990 to 2008^[10] though some studies outside Nigeria found no differences between rural and urban FP.^[12,13]

The uptake of FP services is largely dependent on knowledge,^[14-17] availability,^[18-20] quality of services,^[21] and client's satisfaction.^[22-26] Therefore, this study aimed to compare FP services in Nigeria health facilities of urban and rural areas.

MATERIALS AND METHODS

Study design

This study was a cross-sectional study that was carried out in primary and secondary health facilities in Nigeria. Tertiary health facilities were excluded because they are mainly situated in urban settings in Nigeria and this could affect the study outcome. The study was conducted in 204 rural and 198 urban health facilities, of which 182 were primary and 216 were secondary health facilities. Structure questionnaires were used to collect information from the study participants.

Sample size calculation

Sample size was calculated using the number licensed health facilities (15.664) offering FP services in Nigeria.^[27]

$$n = \frac{N}{(1 + Ne^2)} \quad [28]$$

n is sample size, N = number of health facilities offering FP services = 15664, and e = marginal error of 5% = 0.05.

$$n = \frac{15664}{(1 + 15664 \times 0.05^2)}$$

$$n = 390$$

The minimum sample size was 390. However, 398 primary and secondary health facilities were randomly selected for the study. One FP client was selected from each of the facilities for an interview during a visit to each of the health facilities by researchers and data collectors.

Data collection

Qualified data collectors were recruited and trained for 2 days before being dispatched for data gathering. Data collected

include the various types of contraception available, waiting time, and satisfaction with services.

Inclusion and exclusion criteria

Only licensed public primary and secondary health facilities providing FP services were selected for the study while facilities not providing FP services were excluded.

Data analysis

The data collected were cleaned and analyzed with IBM SPSS Statistics for Windows, Version 25.0. Armonk, NY: IBM Corp. IBM Corp. Descriptive and inferential statistics were performed and $P < 0.05$ was considered significant.

Ethical issues

The respondents were issued an informed consent form to sign. They were completely briefed about the study and the proposed use of the results. They were informed that their responses were confidential and they were advised that they could refuse to respond if they were unhappy with the questions. A letter of ethical approval signed by the Health Study Ethics Committee of the Federal Ministry of Health (NHREC/10/11/2018-30/12/2018), Abuja, Nigeria was obtained.

RESULTS

Among 398 facilities visited in this study, 51.3% were located in rural areas, while urban had 48.7%. The proportion of the facilities from the Northern part (North-East, North-West, and North-central) of the country was 52.3% and 47.7% from the South (South-South, South-East, and South-West). Only primary and secondary public health facilities were assessed, comprising 182 (45.7%) primary and 216 (54.3%) secondary health facilities. Injectables were the most requested contraceptives method (48.2%), followed by oral contraceptives (22.6%) and the least requested method was female condom (1.0%) as shown in Table 1.

Table 2 shows the clients' waiting time to receive FP services in both rural and public health facilities offering FP services. The majority of clients in both the rural (76.0%) and urban (76.3%) wait for <30 min before being attended to. However, 20.1% of clients in urban health facilities stated that they waited for 30 min to 1 h as compared to 15.2% in rural health facilities. Furthermore, 6.9% of the clients in rural health facilities stated their waiting time as more than 2 h as compared to 1.0% in urban health facilities ($P < 0.05$).

Quality of service

Table 3 indicates the quality of FP services in both rural and urban health facilities in Nigeria. The overall quality of service as rated by the clients (based on 7 points) was 6.3 of 7 (90.0%) in rural and 6.5 of 7 (92.9%) in Urban health facilities ($P < 0.05$).

Table 4 shows client's satisfaction with services received. While 85.5% of clients attending health facilities in urban areas were satisfied with waiting time, 78.9% of the rural areas were

also satisfied. Over 90% of both rural and urban clients were satisfied with how providers received them, cleanliness of the facilities, and time spend with care providers, but less than half (<50%) were satisfied with the services they received in both rural and urban health facilities.

As shown in Figure 1, significantly higher quality of services was reported by clients in the northern parts of Nigeria (6.74 of 7) as compared to 6.24 of 7 in the South ($P < 0.001$). Client's satisfaction was rated slightly higher in the South (6.56 of 7) than in the North (6.32 of 7), ($P > 0.05$). No statistically significant difference of clients' satisfaction and

service quality was observed between rural and urban health facilities ($P > 0.05$).

DISCUSSION

This study assessed FP services in rural and urban healthcare facilities (primary and secondary) in Nigeria, using client's waiting time, quality of services, and client's satisfaction with FP services received as evaluation yardsticks. This study found that injectables (48.2%) and oral contraceptives (22.6%) were the most common FP methods requested for in health facilities by Nigerian women, both in rural and urban settings. Although this study did not assess the prevalence of the use of contraceptives, the findings are closely related to the reports of previous studies on the use of contraceptives among women of reproductive age (15–49 years) in Nigeria. For example, it was reported in 2019 that most Nigerian women that used modern FP methods largely use male condoms, injectables, and oral contraceptives pills with 43%, 21%, and 16%, respectively.^[29] Another study conducted in two southwestern states found that oral pills (18.0%), male condoms (16.4%), and injectables (10.2%) are the most ever used contraceptives methods among the study participants.^[30] A study conducted in Umuahia; South-east Nigeria also found that the most ever used contraceptives methods include condoms (48.4%) and oral contraceptives pills (26.3%).^[31] That request for male condoms was low in this study does not mean that the use of male condoms was very low. This might be because condoms are very cheap and affordable in any pharmacy without any prior tests, so it is not necessary to go and request for male condoms in the health facilities when it can be obtained in small shops around the villages.

While the majority of clients in both rural and urban health institutions in this study stated that they waited for <30 min before being attended to, one of every five (20.1%) of FP

Table 1: Distribution of the study participants based on facility location and service required

Facility type (n=398)	Frequency, n (%)
Location	
Rural	204 (51.3)
Urban	194 (48.7)
Region	
North	208 (52.3)
South	190 (47.7)
Facility level	
Primary	182 (45.7)
Secondary	216 (54.3)
Type of FP requested	
Injectables	192 (48.2)
Oral contraceptives	90 (22.6)
IUDs	49 (12.3)
Implants	29 (7.3)
Male condom	20 (5.0)
Emergency contraception	9 (2.3)
Sterilization for females	5 (1.3)
Female condom	4 (1)

FP: Family planning, IUDs: Intrauterine devices

Table 2: Waiting time to see the service provider

Institution	Waiting time				Total	χ^2	P
	<30 min	30 min-1 h	1-2 h	>2 h			
Rural	155 (76.0)	31 (15.2)	4 (2.0)	14 (6.9)	204	9.924	0.019*
Urban	148 (76.3)	39 (20.1)	5 (2.6)	2 (1.0)	194		
Total	303 (76.1)	70 (17.6)	9 (2.3)	16 (4.0)	398 (100.0)		

*=Significant association $P=0.05$ level

Table 3: Quality of family planning service received by clients

Service	Rural	Urban	χ^2	P
Received contraceptives method of choice/required	186 (91.2)	185 (95.4)	2.753	0.097
Provider took client's wishes and decision into consideration in providing FP services	187 (91.7)	187 (96.4)	3.918	0.048*
Received training on how to use the method given	186 (91.2)	187 (96.4)	4.594	0.032*
Given information about the common side effects of the method	187 (91.7)	188 (96.9)	5.015	0.025*
Informed on what to do regarding side effects in case they occur	181 (88.7)	180 (92.8)	1.942	0.163
Informed about the serious complications and the need to report in hospital in case they occur	177 (86.8)	181 (93.3)	4.696	0.030*
Given any date for checkup and/or additional supplies?	187 (91.7)	187 (96.4)	3.918	0.048*
Overall (on a 7-points scale assessment) (%)	6.3 of 7 (90.0)	6.7 of 7 (95.7)	F (18.750)	0.023*

FP: Family planning; *: Significant at $p < 0.05$ level

Table 4: Client’s satisfaction with family planning services received in rural and urban public healthcare facilities

Service	Rural	Urban	χ^2	P
Are you satisfied with the waiting time?	161 (78.9)	166 (85.6)	2.996	0.083
Did staff at the health facility receive you well?	190 (93.1)	190 (97.9)	5.308	0.021
Are you satisfied with the service you received?	95 (46.6)	87 (44.8)	0.119	0.730
Are you satisfied with the cleanliness of the health facility?	187 (91.7)	182 (93.8)	0.679	0.410
Are you satisfied with the privacy in the exam room?	181 (88.7)	179 (92.3)	1.445	0.229
Are you satisfied with the time the health care provider spent attending to you?	199 (97.5)	188 (96.9)	0.152	0.696
Would you like to receive services from this health provider next time?	183 (89.7)	191 (98.5)	13.428	<0.001**
Overall (on a 7-points scale assessment)	6.3 of 7 (90.0%)	6.5 of 7 (92.9%)	F (1.839)	0.186

**=Significant association $P=0.01$ level

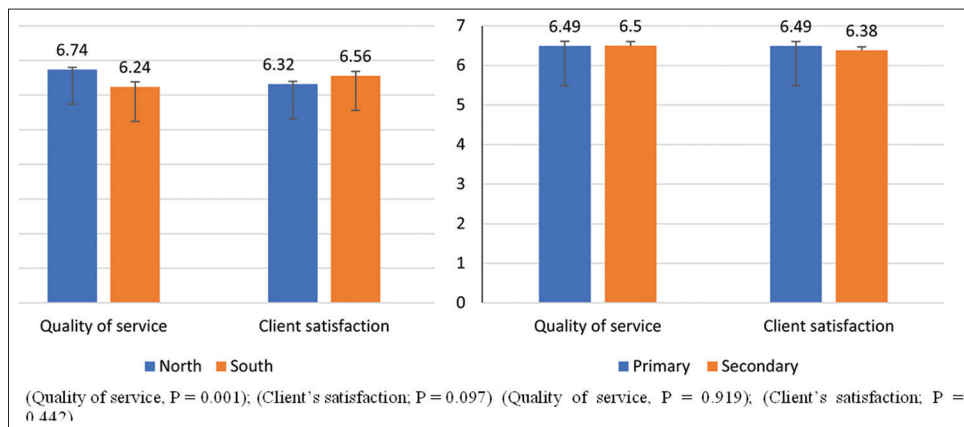


Figure 1: Comparison of quality of family planning services based on location and the level of facility

clients in urban health facilities still had to wait for as long as 30 min to 1 h before service providers attend to them. About 7% of FP clients in rural health facilities declared a waiting time of more than 2 h as compared to just 1.0% in urban areas ($P < 0.05$). Evidence has shown that the two main determinants of client’s satisfaction with FP services are available and waiting time.^[18,19,25,32,33] Similar low waiting time below 30 min has been reported in previous studies in Nigeria. For example, a study conducted in five Nigerian states in 2015 revealed a waiting time below 30 min in Anambra (94.4%), Benue (89.5%), Kaduna (92.0%), Plateau (81.8%), and Federal Capital Territory (77.5%).^[34] Another study conducted in Sokoto showed that the majority of FP clients (49.3%) reported a waiting time below 30 min while 25.4% stated a waiting time of 31–60 min.^[32] Although this study did not cover reasons for long waiting time, the low waiting time observed in this study might be due to fewer clients attending health facilities due to cost, inadequate manpower and poor facilities in most healthcare centres.^[34] Regardless of the reasons for long waiting time, this should be discouraged by providing all necessary assistance to both the care providers and the FP clients so that higher uptake of FP services will be achieved.

FP clients attending health facilities in urban areas rated the quality of services offered by providers at 95.7%, which was significantly higher than 90.0% in rural communities ($P < 0.05$). Higher proportions of urban FP

clients were given contraceptives methods they requested for, their decisions were considered by providers, they were given training on how the FP methods should be used, they received information on possible complications or side effects, and when they should report to the hospital than clients in rural health settings. Higher quality of FP services in urban areas might be one of the major reasons why the prevalence of contraceptives is higher in urban areas than rural areas as previously documented in Nigeria^[10,11,35] and in some other countries.^[13,36-38]

While the majority of clients in both rural and urban health facilities were optimally satisfied with waiting time to see providers, cleanliness of the facilities, privacy, and care, <50% were satisfied with the kind the specific service they received (urban 44.8%, and rural 46.6%). Clients from the northern parts of the country rated the quality of services significantly higher ($P < 0.001$) than those from the south, but the level of satisfaction from both regions was similar ($P > 0.05$). No significant difference was observed in either the level of satisfaction or quality of services between primary and secondary health facilities across Nigeria ($P > 0.05$). Previous studies have established a strong association between the provision of quality and affordable services with improved FP uptakes among women of reproductive age in developing countries.^[39,40] The U. S. Agency for International Development even emphasized it that “one factor that could increase the contraceptives prevalence and decrease the level of unmet

need is improving the quality of care in FP services.”^[21] The findings of this study showed that there is a need for urgent actions towards improving FP services in Nigerian primary and secondary health facilities.

CONCLUSION

This study found that injectables and oral contraceptives are the most common FP methods requested for in primary and secondary health facilities by Nigerian women, both in rural and urban settings. The study also found that although most clients reported a waiting time below 30 min, a relatively high proportion of women attending FP clinics in urban areas still reported high waiting time of up to 1 h before providers attend to them. Furthermore, less than half of the clients were satisfied with the services they received. There is a need for an improvement in waiting time and quality of services offered in health facilities. Policymakers should carry out regular supervision of health facilities and ensure availability of contraceptives in the health facilities at affordable prices in order to improve FP uptake in Nigeria.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

REFERENCES

- WHO. Contraception. World Heal Organ; 2013. Available from: https://www.who.int/health-topics/contraception#tab=tab_1. [Last accessed on 2021 Feb 09].
- United Nations. World Population Projected to Reach 9.6 Billion by 2050. World Popul Prospect 2012 Revis Press Release “World Popul to Reach 96 Billion by 2050 with Most Growth Dev Reg Espec Africa;” 2013. p. 4. Available from: <http://esa.un.org/unpd/wpp/Documentation/publications.htm>. [Last accessed on 2013 Jun 13].
- US Bureau Census. 2017 National Population Projections Datasets. Washing DC: U.S. Census Bur; 2017; 2019 (10/30). Available from: <https://www.census.gov/data/tables/2017/demo/popproj/2017-summary-tables.html%0Ahttps://www.census.gov/data/datasets/2017/demo/popproj/2017-popproj.html>. [Last accessed on 2021 Feb 09].
- Harvard School of Public Health. World Population to Surpass 7 Billion in 2011; Explosive Population Growth Means Challenges for Developing Nations; 2011. Available from: <https://www.sciencedaily.com/releases/2011/07/110728144933.htm>. [Last accessed on 2021 Feb 09].
- The Economist. Africa’s Population will double by 2050. Spec Rep 2020;2020; 3:1-3. <https://www.economist.com/special-report/2020/03/26/africas-population-will-double-by-2050>. [Last accessed on 2021 Feb 09].
- Ifeadike CO, Eze PN, Ugwoke U, Nnaji GA. Rural-urban differentials in family planning practices and determinants of use among men in anambra state. *Epidemiol Rep* 2015;3:5.
- Simona Varrella. Nigeria: Population 1950-2020 | Statista. Statista; 2020. p. 1-2. <https://www.statista.com/statistics/1122838/population-of-nigeria/>. [Last accessed on 2021 Feb 09].
- Worldometer. World Population Clock: 7.8 Billion People. Worldometer 2020; 2020. Available form: <https://www.worldometers.info/world-population/>. [Last accessed on 2021 Feb 09].
- Adebowale AS. Ethnic disparities in fertility and its determinants in Nigeria. *Fertil Res Pract* 2019;5:1-6.
- Duru CB, Emelumadu OF, Iwu AC, Ohanle I, Agunwa CC, Nwaigbo E, *et al.* Socio-demographic determinants of family planning service utilization among women of reproductive age in Urban Communities of Imo State, Nigeria. *OALib* 2018;05:1-21.
- NPC. Nigeria Demographic and Health Survey.National Population Commission, Federal Republic of Nigeria: NPC; 2013;1-20.
- Ibnouf AH, van den Borne HW, Maarse JA. Utilization of family planning services by married Sudanese women of reproductive age. *East Mediterr Health J* 2007;13:1372-81.
- Sharma V, Mohan U, Das V, Awasthi S. Socio demographic determinants and knowledge, attitude, practice: Survey of family planning. *J Family Med Prim Care* 2012;1:43-7.
- Ali M, Farron M, Ramachandran Dilip T, Folz R. Assessment of family planning service availability and readiness in 10 African countries. *Glob Health Sci Pract* 2018;6:473-83.
- Mozumdar A, Gautam V, Gautam A, Dey A, Uttamacharya, Saith R, *et al.* Choice of contraceptive methods in public and private facilities in rural India. *BMC Health Serv Res* 2019;19:421.
- Olugbade O. Family Planning Indicators Assessment and Data Quality Audit in Selected Health Facilities across Nigeria Family Planning Indicators Assessment and Data Quality Audit in Selected Health Facilities across Nigeria. MEASURE Evaluation; University of North Carolina at Chapel Hill 123 West Franklin Street, Suite 330 Chapel Hill, North www.measureevaluation.org; 2019.
- Williams T, Schutt-Ainé J, Cuca Y. Measuring family planning service quality through client satisfaction exit interviews. *Int Fam Plan Perspect* 2000;26:63-71.
- Mpunga D, Lumbayi JP, Dikamba N, Mwembo A, Ali Mapatano M, Wembodinga G. Availability and quality of family planning services in the democratic republic of the Congo: High potential for improvement. *Glob Health Sci Pract* 2017;5:274-85.
- Barden-O’Fallon J. Availability of family planning services and quality of counseling by faith-based organizations: A three country comparative analysis. *Reprod Health* 2017;14:57.
- Wilkinson MI, Njogu W, Abderrahim N. The Availability of Family Planning and Maternal and Child Health Services. *DHS Comp. Stud. No;* 1993. Available from: <http://dhsprogram.com/pubs/pdf/CS7/CS7.pdf>. [Last accessed on 2020 Jun 23].
- Assaf S, Wang WJ, Mallick L. Quality of care in family planning services at health facilities in Senegal. *DHS Anal Stud* 2015;55:xiii-pp.
- Ali J, Onoja F, ISanni O, Abiodun OP, Ogedengbe CO, Onoja IS. Quality of family planning services and client satisfaction in selected private and public health facilities in Nigeria. *J Middle East N Afr Sci* 2020;6:36-41.
- Bintabara D, Ntwenya J, Maro II, Kibusi S, Gunda DW, Mpondo BCT. Client satisfaction with family planning services in the area of high unmet need: Evidence from Tanzania Service Provision Assessment Survey, 2014-2015. *Reprod Health* 2018;15:127.
- Dulla A, Kondale M, Kejela G. Client Satisfaction with Family Planning Services and Associated Factors in the Rural Public Health Centers of Kucha District, Southern Ethiopia. *Clin Mother Child Heal* 2019;16:1-9.
- Pant DP, Pandey JH. Quality of family planning services delivery and family planning client satisfaction at health facilities in Nepal. *DHS Furth Anal Rep* 2018;113:1-53. Available from: <http://dhsprogram.com/pubs/pdf/FA113/FA113.pdf>. [Last accessed on 2020 Jun 24].
- Tsegaye GA, Kifle WH, Sena BK. Clients satisfaction with family planning services and associated factors among family planning users in Hossana Town Public Health Facilities, South Ethiopia: Facility-based cross-sectional study. *Int J Nurs Midwifery* 2015;7:74-83.
- Ministry of Health FR of Ni. Nigeria Health Facility Registry. Fed Ministy Heal; 2019. p. 3-5. Available from: <https://hfr.health.gov.ng/>. [Last accessed on 2021 Apr 29].
- Castillo R. Who is Slovin and where and how did the Slovin’s formula for determining the sample size for a survey research originated? *ResearchGate [Internet]* 2016 [; https://www.researchgate.net/post/Who_is_Slovin_and_where_and_how_did_the_Slovins_Formula_for_determining_the_sample_size_for_a_survey_research_originated [Last cited on 2021 Apr 10]
- Guttmacher Institute, BMGF. ADDING IT UP: Investing in Contraception and Maternal and Newborn Health. Guttmacher Inst; 2017. p. 1-4. Available from: <http://www.gatesfoundation.org/What-We-Do/>

- Global-Development/Family-Planning%0Ahttps://www.gutmacher.org/fact-sheet/adding-it-up-contraception-mnh-2017%0Ahttps://www. [Last accessed on 2021 Feb 11].
30. Ajayi AI, Adeniyi OV, Akpan W. Use of traditional and modern contraceptives among childbearing women: Findings from a mixed methods study in two southwestern Nigerian states. *BMC Public Health* 2018;18:604.
 31. Ukegbu AU, Onyeonoro UU, Nwokeukwu HI and Okafor GOC. Contraceptive method preferences, use and satisfaction among women of reproductive age (15-49 Years) in Umuahia, Abia State, Nigeria. *J Contracept Stud* 2018;03:1-7.
 32. Kaoje U, Oche M, Isah B, Sambo M, Saad A, Raji M. Determinants of client satisfaction with family planning services in government health facilities in Sokoto, Northern Nigeria. *Sahel Med J* 2015;18:20.
 33. Gebreyesus A. Determinants of client satisfaction with family planning services in public health facilities of Jigjiga town, Eastern Ethiopia. *BMC Health Serv Res* 2019;19:618.
 34. Christian Aid. Assessment of Primary Health Centres in selected States of Nigeria: Summary report of findings from Christian Aid Supported Communities in Anambra, Benue, Kaduna, Plateau States and the Federal Capital Territory (FCT); 2015. p. 38. Available from: <https://www.christianaid.org.uk/sites/default/files/2016-11/Summary-Report-Asse-ssment-Primary-Healthcare-Centres-Nigeria-Jul-2015.pdf> [Last accessed on 2020 Jun 27].
 35. NPC. National Population Commission, Federal Republic of Nigeria. Nigeria Demographic and Health Survey. National Population Commission, Federal Republic of Nigeria: NPC; 2013;1-20.
 36. Martins SL, Starr KA, Hellerstedt WL, Gilliam ML. Differences in family planning services by rural-urban geography: Survey of title X-supported clinics in great plains and Midwestern states. *Perspect Sex Reprod Health* 2016;48:9-16.
 37. Antić L, Djikanović B, Vuković D. Family planning among women in urban and rural areas in Serbia. *Srp Arh Celok Lek* 2013;141:794-9.
 38. Ouma S, Turyasima M, Acca H, Nabbale F, Obita KO, Rama M, *et al.* Obstacles to family planning use among rural women in Atiak health center Iv, Amuru District, Northern Uganda. *East Afr Med J* 2015;92:394-400.
 39. Clelana GJ, Ndugwa PR, Zulu ME. Family planning in sub-Saharan Africa: Progress or stagnation? *Bull World Health Organ* 2011;89:137-43.
 40. Kanma-Okafor OJ, Asuquo EJ, Izuka MO, Balogun MR, Ayankogbe OO. Utilisation and preferences of family planning services among women in Ikosi-Isheri, Kosofe Local Government area, Lagos, Nigeria. *Niger Postgrad Med J* 2019;26:182-8.